Method for Induction of Frozen State of Water at Room Temperature Using Crystal-Derived Coulomb Lines in Support of Biologically Safe Suspended Animation

19 December 2022
Simon Edwards
Research Acceleration Initiative

**Introduction**

Efforts toward achieving the goal of safely suspending entropy in biological tissues have been largely stymied by two serious hurdles related to the methods being explored.

**Abstract**

In cryogenic suspended animation, the first impasse is that water, when it transitions from a liquid state to a solid state, becomes jagged and expands, rupturing the cellular membranes of too many cells in the body for a human being to come back to life after being thawed.

Certain creatures such as frogs have chemicals in their bodies in abundance that act like antifreeze, preventing crystal formation. Thus far, no biologically safe chemical has been identified that could achieve for humans this effect.

Cryogenic preservation also has as a major disadvantage that a loss of coolant would result in the death of the person being preserved. Over stretches of decades or even hundreds of years, the number of ways in which something might go wrong outnumber the ways in which they might go right.

Fundamentally, a zero-energy, solid-state mechanism with no moving or electronic components would be needed that does not harm the living being undergoing the process of suspended animation.

To understand how this may be achieved, one has to first understand how water takes on a frozen (i.e. lattice) configuration when its temperature drops below zero degrees Celsius. Water is frozen when its atoms arrange themselves in a lattice configuration. This happens because the thermal oscillations of the atoms are no longer sufficient at sub-zero temperatures to counteract the mutual repulsion of the negatively charged electrons of the H2O. These molecules constantly seek to maintain a maximal diffusive distance from one another. When electrons align, Coulomb forces are multiplied. As such, when water takes on a lattice configuration, the water can diffuse to a greater extent than otherwise possible if it were in a liquid state.

When water is above a certain temperature, individual molecules can move about randomly, breaking the ordered structure and rendering the overall body of molecules a liquid. Thus, two forms of motion; thermal motion and the Coulomb-enhanced diffusive motion are at odds with one another.

One of the key behaviors of freezing water that makes cryogenic preservation problematic is the expansion that occurs in the instant of the phase change.

While it is generally true that liquids contract as their temperature decreases, the boundaries of phase changes of matter are an exception to this rule.

This brings us to the reason why room-temperature crystallization of water is the solution that will enable successful suspended animation. If it were possible to cause water to transition to a frozen state at room or body temperature or even higher temperatures, metabolic functions could be halted by bringing about a crystalline configuration of water within the body without any refrigeration or chemical injection.

The key difference here is that since the water is at a comparatively high temperature to begin with; having not undergone the contraction associated with the drop from 36°C to 0°C; it would not expand harmfully when it enters the artificially-enhanced Coulomb-induced frozen state.

While Coulomb forces acting without the benefit of aligned electrons are understood to have the ability to extert force over a distance of about four atomic widths of hydrogen, when alignments exist, the field of influence can be expanded almost indefinitely. Crystals such as quartz have already been synthetically constructed in order to create these alignments to exert Coulomb force over great distances. If a sufficient number of these crystals could be aligned, force lines great enough to induce crystallization of water at high temperatures could be produced over an area large enough to "hot freeze" something the size of an adult human being.

Depending upon how large of a crystal would be needed to produce this effect, one of two primary approaches could be used. One would be a casket in which a crystalline lid is lowered onto the casket, sealing a person inside. If a thickness greater than a few feet is required, the entire wall of a building might be constructed out of the same type of crystal with the individual to be preserved being slid into position under the wall on a movable tray.

**Conclusion**

Given that the freezing and thawing processes would, in theory, be instantaneous and would not result in the expansion of the frozen water, the person frozen should be able to arrive safely in the future in approximately the same state as when they entered the Coulomb field.